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National Occupational Analysis

2012 | Cabinetmaker

Human Resources and Skills Development Canada
Ressources humaines et Développement des compétences Canada
Canada

Occupational Analyses Series

Cabinetmaker

2012

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FOREWORD

The Canadian Council of Directors of Apprenticeship (CCDA) recognizes this National Occupational Analysis as the national standard for the occupation of Cabinetmaker.

Background

The first National Conference on Apprenticeship in Trades and Industries, held in Ottawa in 1952, recommended that the federal government be requested to cooperate with provincial and territorial apprenticeship committees and officials in preparing analyses of a number of skilled occupations. To this end, Human Resources and Skills Development Canada (HRSDC) sponsors a program, under the guidance of the CCDA, to develop a series of National Occupational Analyses (NOA).

The NOAs have the following objectives:

- to describe and group the tasks performed by skilled workers;
- to identify which tasks are performed in every province and territory;
- to develop instruments for use in the preparation of Interprovincial Red Seal Examinations and curricula for training leading to the certification of skilled workers;
- to facilitate the mobility of apprentices and skilled workers in Canada; and,
- to supply employers, employees, associations, industries, training institutions and governments with analyses of occupations.

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This analysis was prepared by the Labour Market Integration Directorate of HRSDC. The coordinating, facilitating and processing of this analysis were undertaken by employees of the NOA development team of the Trades and Apprenticeship Division. The host jurisdiction of Alberta also participated in the development of this NOA.

TABLE OF CONTENTS

FOREWORD			I
ACKNOWLEDGEMENTS			II
TABLE OF CONTENTS			III
LIST OF PUBLISHED NATIONAL OCCUPATIONAL ANALYSES			V
STRUCTURE OF ANALYSIS			VII
DEVELOPMENT AND VALIDATION OF ANALYSIS			IX
ANALYSIS			
SAFETY			3
SCOPE OF THE CABINETMAKER TRADE			4
OCCUPATIONAL OBSERVATIONS			6
ESSENTIAL SKILLS SUMMARY			7
BLOCK A	**COMMON OCCUPATIONAL SKILLS**		
	Task 1	Performs safety-related functions.	9
	Task 2	Maintains tools and equipment.	11
	Task 3	Organizes work.	14
	Task 4	Performs routine work practices.	17
BLOCK B	**MACHINING**		
	Task 5	Machines components using stationary and portable power tools.	21
	Task 6	Machines components using automated equipment.	25
BLOCK C	**FORMING AND LAMINATING**		
	Task 7	Creates curved components using wood and composite materials.	27
	Task 8	Laminates wood and composite materials.	29

BLOCK D	**VENEERS AND LAMINATES**		
	Task 9	Applies veneers.	32
	Task 10	Applies laminate sheets.	35
BLOCK E	**SHOP ASSEMBLY**		
	Task 11	Assembles cabinets and furniture.	38
	Task 12	Assembles architectural millwork products.	42
BLOCK F	**FINISHING**		
	Task 13	Prepares surface for finishing.	45
	Task 14	Finishes wood products.	47
BLOCK G	**ON-SITE ASSEMBLY AND INSTALLATION**		
	Task 15	Modifies products to site conditions.	50
	Task 16	Installs cabinets and countertops.	52
	Task 17	Installs architectural millwork products and mouldings.	54
BLOCK H	**SPECIALIZED OPERATIONS**		
	Task 18	Builds stairs and balustrades.	57
	Task 19	Works with solid surface material and custom countertops.	60
	Task 20	Creates decorative woodwork.	62
	Task 21	Restores woodwork.	64

APPENDICES

APPENDIX A	**TOOLS AND EQUIPMENT**	69
APPENDIX B	**GLOSSARY**	72
APPENDIX C	**ACRONYMS**	74
APPENDIX D	**BLOCK AND TASK WEIGHTING**	75
APPENDIX E	**PIE CHART**	79
APPENDIX F	**TASK PROFILE CHART**	80

LIST OF PUBLISHED NATIONAL OCCUPATIONAL ANALYSES (Red Seal Trades)

TITLE	NOC* Code
Agricultural Equipment Technician (2007)	7312
Appliance Service Technician (2011)	7332
Automotive Painter (2009)	7322
Automotive Service Technician (2011)	7321
Baker (2011)	6332
Boilermaker (2008)	7234
Bricklayer (2011)	7281
Cabinetmaker (2012)	7272
Carpenter (2010)	7271
Concrete Finisher (2006)	7282
Construction Craft Worker (2009)	7611
Construction Electrician (2011)	7241
Cook (2011)	6322
Electrical Rewind Mechanic (1999)	7333
Floorcovering Installer (2012)	7295
Glazier (2008)	7292
Hairstylist (2011)	6341
Heavy Duty Equipment Technician (2009)	7312
Heavy Equipment Operator (2012)	7521
Industrial Electrician (2011)	7242
Industrial Mechanic (Millwright) (2009)	7311
Instrumentation and Control Technician (2010)	2243
Insulator (Heat and Frost) (2012)	7293
Ironworker (Generalist) (2010)	7236
Ironworker (Reinforcing) (2010)	7236
Ironworker (Structural/Ornamental) (2010)	7236
Landscape Horticulturist (2010)	2225
Lather (Interior Systems Mechanic) (2012)	7284
Machinist (2010)	7231

*National Occupational Classification

TITLE	NOC* Code
Metal Fabricator (Fitter) (2008)	7235
Mobile Crane Operator (2009)	7371
Mobile Crane Operator ((Hydraulic) (2012)	7371
Motorcycle Mechanic (2006)	7334
Motor Vehicle Body Repairer (Metal and Paint) (2010)	7322
Oil Burner Mechanic (2006)	7331
Painter and Decorator (2011)	7294
Partsperson (2010)	1522
Plumber (2010)	7251
Powerline Technician (2009)	7244
Recreation Vehicle Service Technician (2006)	7384
Refrigeration and Air Conditioning Mechanic (2009)	7313
Rig Technician (2008)	8232
Roofer (2006)	7291
Sheet Metal Worker (2010)	7233
Sprinkler System Installer (2009)	7252
Steamfitter — Pipefitter (2010)	7252
Tilesetter (2010)	7283
Tool and Die Maker (2010)	7232
Tower Crane Operator (2012)	7371
Transport Trailer Technician (2008)	7321
Truck and Transport Mechanic (2010)	7321
Welder (2009)	7237

Comments or questions about National Occupational Analyses may be forwarded to:

Trades and Apprenticeship Division
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Human Resources and Skills Development Canada
140 Promenade du Portage, Phase IV, 5th Floor
Gatineau, Quebec K1A 0J9

These publications can be downloaded online at: www.red-seal.ca. Links to Essential Skills Profiles for some of these trades are also available on this website.

STRUCTURE OF ANALYSIS

To facilitate understanding of the occupation, the work performed by tradespersons is divided into the following categories:

Blocks	the largest division within the analysis that is comprised of a distinct set of trade activities
Tasks	distinct actions that describe the activities within a block
Sub-Tasks	distinct actions that describe the activities within a task
Key Competencies	activities that a person should be able to do in order to be called 'competent' in the trade

The analysis also provides the following information:

Trends	changes identified that impact or will impact the trade including work practices, technological advances, and new materials and equipment
Related Products	a list of products, items, materials and other elements relevant to the block
Tools and Equipment	categories of tools and equipment used to perform all tasks in the block; these tools and equipment are listed in Appendix A
Context	information to clarify the intent and meaning of tasks
Required Knowledge	the elements of knowledge that an individual must acquire to adequately perform a task

The appendices located at the end of the analysis are described as follows:

Appendix A — Tools and Equipment	a non-exhaustive list of tools and equipment used in this trade
Appendix B — Glossary	definitions or explanations of selected technical terms used in the analysis
Appendix C — Acronyms	a list of acronyms used in the analysis with their full name
Appendix D — Block and Task Weighting	the block and task percentages submitted by each jurisdiction, and the national averages of these percentages; these national averages determine the number of questions for each block and task in the Interprovincial exam
Appendix E — Pie Chart	a graph which depicts the national percentages of exam questions assigned to blocks
Appendix F — Task Profile Chart	a chart which outlines graphically the blocks, tasks and sub-tasks of this analysis

DEVELOPMENT AND VALIDATION OF ANALYSIS

Development of Analysis

A draft analysis is developed by a committee of industry experts in the field led by a team of facilitators from HRSDC. This draft analysis breaks down all the tasks performed in the occupation and describes the knowledge and abilities required for a tradesperson to demonstrate competence in the trade.

Draft Review

The NOA development team then forwards a copy of the analysis and its translation to provincial and territorial authorities for a review of its content and structure. Their recommendations are assessed and incorporated into the analysis.

Validation and Weighting

The analysis is sent to all provinces and territories for validation and weighting. Participating jurisdictions consult with industry to validate and weight the document, examining the blocks, tasks and sub-tasks of the analysis as follows:

BLOCKS	Each jurisdiction assigns a percentage of questions to each block for an examination that would cover the entire trade.
TASKS	Each jurisdiction assigns a percentage of exam questions to each task within a block.
SUB-TASKS	Each jurisdiction indicates, with a YES or a NO, whether or not each sub-task is performed by skilled workers within the occupation in its jurisdiction.

The results of this exercise are submitted to the NOA development team who then analyzes the data and incorporates it into the document. The NOA provides the individual jurisdictional validation results as well as the national averages of all responses. The national averages for block and task weighting guide the Interprovincial Red Seal Examination plan for the trade.

This method for the validation of the NOA also identifies common core sub-tasks across Canada for the occupation. If at least 70% of the responding jurisdictions perform a sub-task, it shall be considered common core. Interprovincial Red Seal Examinations are based on the common core sub-tasks identified through this validation process.

Definitions for Validation and Weighting

YES	sub-task performed by qualified workers in the occupation in a specific jurisdiction
NO	sub-task not performed by qualified workers in the occupation in a specific jurisdiction
NV	analysis Not Validated by a province/territory
ND	trade Not Designated in a province/territory
NOT COMMON CORE (NCC)	sub-task, task or block performed by less than 70% of responding jurisdictions; these will not be tested by the Interprovincial Red Seal Examination for the trade
NATIONAL AVERAGE %	average percentage of questions assigned to each block and task in Interprovincial Red Seal Examination for the trade

Provincial/Territorial Abbreviations

NL	Newfoundland and Labrador
NS	Nova Scotia
PE	Prince Edward Island
NB	New Brunswick
QC	Quebec
ON	Ontario
MB	Manitoba
SK	Saskatchewan
AB	Alberta
BC	British Columbia
NT	Northwest Territories
YT	Yukon Territory
NU	Nunavut

ANALYSIS

Safe working procedures and conditions, accident prevention, and the preservation of health are of primary importance to industry in Canada. These responsibilities are shared and require the joint efforts of government, employers and employees. It is imperative that all parties become aware of circumstances that may lead to injury or harm. Safe learning experiences and work environments can be created by controlling the variables and behaviours that may contribute to accidents or injury.

It is generally recognized that safety-conscious attitudes and work practices contribute to a healthy, safe and accident-free work environment.

It is imperative to apply and be familiar with the Occupational Health and Safety (OH&S) Acts and Workplace Hazardous Materials Information System (WHMIS) Regulations. As well, it is essential to determine workplace hazards and take measures to protect oneself, co-workers, the public and the environment.

Safety education is an integral part of training in all jurisdictions. As safety is an imperative part of all trades, it is assumed and therefore it is not included as a qualifier of any activities. However, the technical safety tasks and sub-tasks specific to the trade are included in this analysis

SCOPE OF THE CABINETMAKER TRADE

"Cabinetmaker" is this trade's official "Red Seal" occupational title approved by the CCDA. This analysis covers tasks performed by cabinetmakers whose occupational title has been identified by some provinces and territories of Canada under the following names:

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
Cabinetmaker	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Joiner										✓			

Cabinetmakers build, repair, finish and install residential and commercial cabinets (including hardware), wooden furniture and architectural millwork using a variety of woods, laminates and other products. Cabinetmakers read drawings and specifications, and prepare layouts. They also set up and operate woodworking equipment, both power and computerized, to machine wood products and composite materials. Cabinetmakers use various power tools and precision woodworking tools to perform their work. Cabinetmakers sand and finish the surfaces either before or after assembly in some shops. They also apply finishing products.

Cabinetmakers are employed by millwork contractors, furniture manufacturers and general contractors. They may also be self-employed. The products they produce may be production or custom-made pieces. Production pieces are made in large quantities and according to a standard design. Custom-made pieces are often from one-of-a-kind designs and are not mass-produced. Some cabinetmakers specialize in a specific type of product, such as custom-made furniture, stairs or cabinet doors. In large cabinet making shops using high-tech, computer-controlled equipment, cabinetmakers may specialize in one or two functions. A working knowledge of the design principles, functional requirements, and traditions associated with furniture building is also advantageous in many areas of the cabinetmaker trade.

Cabinetmakers primarily work in a shop environment, but they may also work at locations where the products are installed. While the working environment varies according to employers and locations, cabinetmakers are often exposed to workplace health and safety risks such as high noise levels, sawdust and chemicals. There are risks of injury involved in working with woodworking machinery, portable power tools and hand tools.

Key attributes for people in this trade are good eye-hand coordination, manual dexterity, mathematical aptitude and good conceptual skills. Cabinetmakers require a high degree of accuracy, and good eyesight to select woods and look for imperfections. The work may require lifting of heavy materials.

This analysis recognizes similarities or overlaps with the work of carpenters and painters/decorators.

With experience, cabinetmakers may act as mentors and trainers to apprentices in the trade. They may advance to supervisory or design positions or may set up their own shop. Some may choose to specialize in areas such as stairs, veneering or finishing.

OCCUPATIONAL OBSERVATIONS

Cabinetmakers must continuously adapt to changing trends, product demands and processes that are introduced by the market-driven industry.

There is a shift in the types of woods and materials used for cabinets and architectural millwork products. Some wood and wood veneers that were previously available are in short supply, resulting in increased cost or difficulties in obtaining them. Man-made or reconstituted materials are entering the market, filling the gap. Cabinetmakers are working with a greater variety of materials. This results in some modification to processes both in the shop and on-site.

Clients are requesting a wider variety of features and accessories such as tall cabinets to accommodate higher ceilings, innovative hardware, recycling centres and counter top materials.

The green market is growing, increasing the demand for non-toxic, user-friendly and eco-friendly products such as water borne finishes, adhesives and recycled materials. These are usually identified in specifications, but can increase application preparation and completion times, and the cost to the end user. There is greater emphasis on waste reduction and recycling. New guidelines are being put in place by standards organizations and regulatory agencies.

There is constant improvement in the tools available to cabinetmakers to complete their daily tasks. These include cabinet jacks, laser levels and cordless tools. Tools and equipment are becoming smaller, more compact, efficient and user-friendly.

Due to advances in technology, computerized equipment is becoming more commonplace. Often, shop drawings are computer-generated and are integrated with the computerized equipment. This results in better quality products, greater efficiency and productivity, and shorter lead times. Also, this technology allows cabinetmakers and customers to view products in a three dimensional format prior to ordering and manufacturing.

There is an increase in specialization in the trade with many cabinetmakers working exclusively on operations such as Computer Numerical Controlled (CNC) machining, solid surfacing, finishing and stair construction.

There is increased government regulation regarding safety in the workplace and more enforcement of standard operating procedures. There is a trend towards more personal responsibility for safety and education on the part of cabinetmakers. They are also becoming more responsible for the safety of less experienced workers.

ESSENTIAL SKILLS SUMMARY

Essential skills are needed for work, learning and life. They provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change.

Through extensive research, the Government of Canada and other national and international agencies have identified and validated nine essential skills. These skills are used in nearly every occupation and throughout daily life in different ways.

A series of CCDA-endorsed tools have been developed to support apprentices in their training and to be better prepared for a career in the trades. The tools can be used independently or with the assistance of a tradesperson, trainer, employer, teacher or mentor to:

- understand how essential skills are used in the trades;
- learn about individual essential skills strengths and areas for improvement; and
- improve essential skills and increase success in an apprenticeship program.

The tools are available online or for order at: www.hrsdc.gc.ca/essentialskills.

The essential skills profile for the cabinetmaker trade indicates that the most important essential skills are **document use, numeracy,** and **problem solving** and **decision making**.

The application of these skills may be described throughout this document within the competency statements which support each subtask of the trade. The following are summaries of the requirements in each of the essential skills, taken from the essential skills profile. A link to the complete essential skills profile can be found at www.red-seal.ca.

Reading
Cabinetmakers use reading skills to read manuals, instructions and details of job specifications such as material lists. They read health and safety materials and WHMIS documents, in order to maintain a safe work environment.

Document Use
Documents that cabinetmakers work with include material lists, instructions and work orders. They may also consult and interpret drawings and sketches. They complete checklists relating to safety precautions.

Writing
Cabinetmakers wr[illegible] lists of materials and instructions. They may write notes to keep records of job specifications for themselves, others and clients. They prepare layouts and shop sketches to guide assembly and installation.

Numeracy
Cabinetmakers use numeracy skills to accurately measure and calculate required building material. They may also estimate time, labour and skillset for a project. The ability to perform unit conversions and to convert between imperial and metric measurements is important. The knowledge of basic geometry is essential.

Oral Communication
Cabinetmakers use oral communication skills to discuss job details with colleagues, apprentices and clients. They also coordinate work with other trades.

Thinking Skills
Problem solving skills are used by cabinetmakers to anticipate and deal with situations such as materials arriving damaged or unplanned machinery breakdowns. They also problem solve when they need to create a custom piece. Cabinetmakers use their decision making skills when dealing with various issues such as work priorities and procedures. Cabinetmakers plan and organize jobs. They must recall standard mesurements, stock numbers of commonly used materials and standard allowances for openings.

Working with Others
Cabinetmakers may work independently or with others. They coordinate their work with other workers on-site including apprentices, journeypersons, foremen, supervisors and workers from other trades depending on the size of the work site and the type of work.

Computer Use
Computer-aided design (CAD) software is often used by cabinetmakers for specifications and drawings. Computer-aided manufacturing (CAM) software may be used for controlling machinery and machine tools to produce work pieces. Cabinetmakers may also work with CNC machines. They may use computers or digital devices to conduct research on a product or to communicate in a production environment.

Continuous Learning
There is an ongoing requirement to learn and gain experience while working as a cabinetmaker. Applications, materials and processes are continually changing and skills need to be kept up-to-date. Certification courses are also available to authorize cabinetmakers to use and install certain types of products.

Trends

Hazard assessment and control is becoming more important in the shop and on the installation site. There is increased enforcement of safety regulations such as the use of personal protective equipment (PPE) and machine controls. Projects are becoming more complicated in design, resulting in cabinetmakers being consulted more often. The use of computers and computerized equipment is resulting in the need for continuous training and less dependency on jigs and templates.

Related Components

All components apply.

Tools and Equipment

See Appendix A.

Task 1 Performs safety-related functions.

Context

Cabinetmakers continually practice safe work methods to prevent injury and ensure a healthy work environment. This also prevents damage to tools, equipment and materials.

Required Knowledge

K 1	WHMIS
K 2	location of documents such as material safety data sheets (MSDS) and OH&S manuals, and manufacturers' specifications of tools and supplies
K 3	company safety policies and procedures
K 4	training requirements for using tools and equipment
K 5	OH&S requirements for work area including workers' rights and responsibilities
K 6	types, location and use of safety equipment such as eye wash stations, fire extinguishers and first aid kits
K 7	emergency procedures such as evacuation and fire drills
K 8	health hazards associated with handling materials and supplies
K 9	disposal and recycling procedures
K 10	types of PPE such as eye protection, hearing protection, foot protection and respiratory protection equipment

Sub-task

A-1.01 **Maintains safe work environment.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-1.01.01	ensure work area is clean and organized to minimize risk to workers and others
A-1.01.02	perform continuous hazard assessment of work area to identify hazards and prevent accidents
A-1.01.03	use safety measures to prevent injury from environmental hazards such as excessive dust and fumes
A-1.01.04	use safety measures to prevent injury from hazards such as slippery surfaces, uneven loads and flying debris
A-1.01.05	identify and report hazards, incidents and accidents to ensure resolution of safety concerns
A-1.01.06	comply with safety policies such as OH&S regulations, and employer and installation site policies
A-1.01.07	handle, store and dispose of hazardous materials such as finishing materials, used rags and chemicals according to safety and environmental regulations
A-1.01.08	ensure adequate ventilation for finishing according to electrical, fire and safety regulations
A-1.01.09	ensure that compressed air is used according to safety regulations

Sub-task

A-1.02 **Uses personal protective equipment (PPE) and safety equipment.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-1.02.01	select PPE such as respiratory equipment, ear, hand and eye protection appropriate for task
A-1.02.02	recognize and replace worn and damaged PPE such as work boots, respiratory equipment and hard hats

A-1.02.03	comply with PPE regulations such as OH&S, and employer and installation site policies
A-1.02.04	store and maintain PPE such as respiratory masks, hearing and eye protection
A-1.02.05	adjust PPE such as respiratory equipment and hard hats to ensure proper fit
A-1.02.06	locate safety equipment such as first aid stations, fire extinguishers, eyewash stations and evacuation kits

Task 2 — Maintains tools and equipment.

Context The proper maintenance of tools and equipment is very important to ensure consistent performance and safety of the user.

Required Knowledge

K 1	types and limitations of hand tools such as chisels and planes
K 2	types and limitations of portable power tools such as cordless and corded
K 3	types and limitations of stationary power tools and equipment such as table saws and shapers
K 4	types and limitations of pneumatic tools and equipment such as nailers, compressors, gauges, filters, staplers and drills
K 5	types of manual finishing equipment
K 6	types of spray systems such as high volume low pressure (HVLP) and airless
K 7	types of spray systems components such as tips, hoses and air caps
K 8	lighting and ventilation requirements for finishing equipment
K 9	types and disposal requirements for cleaning supplies such as solvents, lacquer thinners and rags
K 10	health hazards associated with handling solvents, adhesives and lacquer thinners
K 11	safety procedures for maintaining portable and stationary power tools
K 12	lock out and tag out procedures

Sub-task

A-2.01 **Maintains hand, portable power and pneumatic tools and equipment.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-2.01.01	apply lock out and tag out procedure according to jurisdictional safety regulations and site policies
A-2.01.02	sharpen hand tools such as chisels, planes and cabinet scrapers
A-2.01.03	clean and lubricate hand, power and pneumatic tools according to manufacturers' specifications to ensure safe operation and longevity of tool
A-2.01.04	recognize damage, and replace or repair damaged hand, power and pneumatic tools due to conditions such as cracked and loose handles, damaged power cords and leaking air fittings
A-2.01.05	recognize and replace worn or damaged power tool accessories such as saw blades, portable planer knives and router bits
A-2.01.06	organize and store hand and power tools to maintain accuracy and ensure longevity
A-2.01.07	drain compressors and air dryers according to manufacturers' specifications to prevent moisture in the air supply system
A-2.01.08	change components such as bits, air hoses and fittings
A-2.01.09	use dust collector while using portable power and pneumatic tools and equipment
A-2.01.10	maintain dust collection system for use with portable power and pneumatic tools and equipment

Sub-task

A-2.02 Maintains stationary power tools.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-2.02.01	apply lock out and tag out procedure according to safety regulations and site policies
A-2.02.02	calibrate stationary power tools such as table saws, planers and panel saws to ensure accuracy
A-2.02.03	calibrate CNC equipment such as wide belt sanders, edge banders, beam saws and routers to ensure accuracy
A-2.02.04	recognize tools that are functioning irregularly through sensory awareness (hearing, feeling)
A-2.02.05	clean and lubricate stationary power tools and equipment according to manufacturers' specifications
A-2.02.06	use dust collector during use of stationary power tools and equipment
A-2.02.07	maintain dust collection system for use with stationary power tools and equipment
A-2.02.08	recognize and replace worn or damaged stationary power tool accessories such as saw blades, planer knives and shaper knives
A-2.02.09	set up and maintain guards such as anti-kickback devices and belt guards to prevent injury
A-2.02.10	replace and adjust drive belts to prevent premature wear of belt, ensure proper revolutions per minute (RPM) and increase longevity

Sub-task

A-2.03 Maintains finishing equipment.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-2.03.01	apply lock out and tag out procedure according to safety regulations and site policies
A-2.03.02	clean finishing equipment according to manufacturers' specifications to avoid damage to equipment and contamination of finish
A-2.03.03	lubricate finishing equipment according to manufacturers' specifications to maximize performance
A-2.03.04	store finishing equipment according to manufacturers' specifications for short and/or long term
A-2.03.05	recognize and replace worn or damaged finishing equipment components such as tips and needles
A-2.03.06	change filters in air and fluid lines to ensure a contamination-free finish
A-2.03.07	change filters in ventilation and air makeup system according to performance and safety requirements to ensure balanced and efficient ventilation

Task 3 Organizes work.

Context The ability to communicate with customers and other trades persons, as well as interpret documentation and prints, allows cabinetmakers to organize their work efficiently. Cabinetmakers perform basic design and layout in cooperation with other professionals to ensure a quality final product.

Required Knowledge

K 1	types of drawings such as rough sketches, shop drawings and plans
K 2	drawing specifications and schedules
K 3	types of views such as plan, elevation, section and detail
K 4	sequence of work
K 5	basic design terminology and concepts
K 6	characteristics and applications of materials and hardware
K 7	standard dimensions such as table, chair and counter heights

K 8	architectural quality assurance guidelines
K 9	location of installed cabinets, stairs and architectural millwork
K 10	layout materials such as hardboard and medium density fibreboard (MDF)
K 11	accessibility
K 12	Canadian Standards Association (CSA) documentation

Sub-task

A-3.01 Interprets prints and drawings.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-3.01.01	locate and cross reference information in drawings and specifications such as dimensions, materials and finishes to determine job requirements
A-3.01.02	produce shop drawings and notes based on drawings and specifications to communicate project tasks
A-3.01.03	produce material take offs from shop drawings to facilitate ordering and estimating of material
A-3.01.04	recognize symbols on architectural drawings such as mechanical and electrical symbols as it relates to the millwork
A-3.01.05	reference industry standards and codes including the Manual of the Architectural Woodwork Manufacturers Association of Canada (AWMAC)

Sub-task

A-3.02 Plans project.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-3.02.01	assist in determining daily, weekly and project objectives
A-3.02.02	determine material and hardware requirements according to shop drawings
A-3.02.03	determine tool, equipment and shop space requirements according to project requirements
A-3.02.04	assist in determining time and labour requirements

Sub-task

A-3.03 Performs basic design.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-3.03.01	interpret client needs and preferences to ensure construction of expected final product
A-3.03.02	visualize project to recognize potential problems such as obstruction of utilities, and conflict between function and appearance
A-3.03.03	resolve potential construction challenges such as inaccessibility, obstacles and services
A-3.03.04	draw rough sketches such as isometric and orthographic to facilitate communication with client
A-3.03.05	maximize yield from materials and labour through efficient design
A-3.03.06	produce basic dimension drawings using CAD and manual method
A-3.03.07	check for design requirements such as accessibility and measurement

Sub-task

A-3.04 Performs layout of cabinets, furniture and architectural millwork.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-3.04.01	select and use layout tools such as trammel points, straight edges and tape measures to ensure accuracy
A-3.04.02	transfer drawing information and specifications to full scale layout to ensure functionality, identify potential problems on site and to facilitate communication with other trades
A-3.04.03	take site measurements to ensure accuracy and to avoid obstruction of utilities
A-3.04.04	template site conditions such as curved and angled walls, and walls out of plumb
A-3.04.05	perform basic geometric calculations such as radius, slope and circumference

A-3.04.06	observe site conditions such as passage doors, elevators and parking to enable product pieces to be shipped to final location
A-3.04.07	check for design requirements such as accessibility and measurement

Task 4 — Performs routine work practices.

Context These foundation skills are used throughout the trade and must be maintained and may be performed prior to other trade tasks. Jigs, templates and prototypes allow cabinetmakers to work more efficiently and accurately. Making prototypes and dry fitting components help cabinetmakers visualize and refine the final product.

Required Knowledge

K 1	metric and imperial measurement systems
K 2	site measurements
K 3	types of cabinet, furniture and architectural hardware such as hinges, slides, locks and pulls
K 4	32 mm system
K 5	clearances and tolerances
K 6	storage requirements of materials, supplies and products
K 7	company policies for material handling and shipping
K 8	handling procedures for sheet good materials during fabrication
K 9	acclimatization requirements
K 10	safety considerations, accuracy and limitations of jigs and templates
K 11	jig and template materials and hardware
K 12	adhesives used for substrates and edge treatment
K 13	importance of dry fitting components
K 14	assembly systems
K 15	finished product dimensions and requirements

Sub-task

A-4.01 **Handles materials, supplies and products.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-4.01.01	verify that products received match purchase order to avoid delays in project
A-4.01.02	check products for damage and quality to ensure adequate supply for projects
A-4.01.03	disassemble and label various sections of final product for ease of site assembly and installation
A-4.01.04	pack and wrap products using materials such as plastic wrap, blankets and cardboard to prevent damage during transport, and secure in vehicle
A-4.01.05	load and secure products in transport vehicle using items such as cargo jacks and straps
A-4.01.06	assess size and weight of products to accommodate handling limitations and to prevent injury and product damage
A-4.01.07	temporarily protect products after installation to avoid damage
A-4.01.08	store materials such as sheet goods and solid lumber to prevent injury to persons and damage to product
A-4.01.09	transport materials and supplies in the shop to avoid injury to persons and damage to materials

Sub-task

A-4.02 **Fabricates jigs and templates.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-4.02.01	select jig and template material such as MDF and acrylic according to job requirements
A-4.02.02	select and use layout and machining tools to produce jigs and templates to ensure accuracy
A-4.02.03	test jig and template to determine its accuracy and durability

A-4.02.04	label and store jigs and templates for future use
A-4.02.05	make template on site to transfer site dimensions to final product in the shop

---

Sub-task

A-4.03 Builds prototypes.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-4.03.01	select prototype material such as actual, simulated or equivalent material based on visual and functional needs
A-4.03.02	recognize and resolve potential construction challenges such as inaccessibility, obstacles and location of services in order to meet customer needs
A-4.03.03	test and modify prototypes and hardware, as required to meet manufacturing and customer needs
A-4.03.04	determine when it is appropriate to build a prototype according to time, labour and material considerations

---

Sub-task

A-4.04 Dry fits components.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-4.04.01	use devices such as bar clamps, band clamps and case clamps to ensure tight joints, and square and correct fit
A-4.04.02	identify and correct construction defects/faults such as incorrect size, missing parts and out-of-square
A-4.04.03	measure and verify tolerances in dry fit components to avoid inaccuracies and compounded errors

Sub-task

A-4.05 Selects hardware.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-4.05.01	ensure hardware will meet customer needs and expectations such as appearance and function
A-4.05.02	ensure hardware will meet safety and durability considerations such as weight restrictions, tipping hazard and repetitive use
A-4.05.03	perform hardware takeoff from drawings and design to ensure adequate numbers are in stock and ordered
A-4.05.04	evaluate specialty hardware for components such as pull out bins and pocket doors to determine project and material specifications

Sub-task

A-4.06 Selects adhesives and fasteners.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

A-4.06.01	determine materials required in project construction
A-4.06.02	determine range of adhesives such as contact cement and wood glues that are compatible with project materials
A-4.06.03	select specific adhesive according to considerations such as customer specifications, strength, site considerations, availability and price
A-4.06.04	determine range of fasteners such as biscuits, staples and screws that are compatible with components
A-4.06.05	select specific fasteners according to considerations such as strength, appearance, customer considerations, availability and price

Trends	The machinery is getting more automated and technical. There is a greater emphasis on programming and optimizing yield. There is a constant improvement in tool design and cutting edges.
Related Components (including, but not limited to)	Solid wood, plastics, sheet materials, metal components, edge banding.
Tools and Equipment	Hand tools, portable power tools, stationary power tools, measuring tools, automated equipment, PPE and safety equipment.

Task 5 Machines components using stationary and portable power tools.

Context Cabinetmakers prepare wood and sheet goods in a variety of shapes and sizes according to drawings and specifications. This process modifies materials, changing them from a rough product to a processed state after which they are ready to be assembled.

Required Knowledge

K 1	machinery used for breaking out solid wood
K 2	properties and characteristics of wood such as cut, grain direction, density and colours
K 3	required dimensions and quantities
K 4	sequence of dressing operations
K 5	procedures for use and limitations of stationary and portable power tools
K 6	dimensions and shape required of finished product
K 7	types of edge treatments such as polyvinyl chloride (PVC), solid wood and high pressure laminate (HPL)
K 8	adhesives for edging and automated applications
K 9	properties and characteristics of plywood
K 10	properties and characteristics of composite sheet materials such as melamine, particle board, MDF and hardboard

K 11	available sheet good thicknesses and sizes
K 12	types of assembly joints such as dovetails, rabbets, dowel joints, biscuit joints, dados and mitres
K 13	scraping and preliminary sanding techniques
K 14	causes of performance problems such as chipping and burning

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Sub-task

B-5.01 Breaks out solid wood.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

B-5.01.01	check moisture content
B-5.01.02	develop and review cut list to optimize material according to job specifications
B-5.01.03	ensure adequate inventory is available
B-5.01.04	select proper lumber thickness and width according to cut list
B-5.01.05	select and use tools and equipment such as rip saws, jointers, re-saws and pop-up saws
B-5.01.06	recognize material faults and defects such as knots and checks
B-5.01.07	select appropriate wood for desired visual aesthetic

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Sub-task

B-5.02 Dresses solid wood.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

B-5.02.01	joint, plane and rip solid wood to desired width and thickness using tools and equipment such as jointers, planers and table saws
B-5.02.02	interpret board characteristics such as crooks and grain direction to determine suitability according to job specifications
B-5.02.03	determine lengths according to optimal yield

B-5.02.04	cut to length using tools and equipment such as radial arm saws, chop saws and table saws
B-5.02.05	correct performance problems such as chipping and burning

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Sub-task

B-5.03 Shapes solid wood.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

B-5.03.01	review drawings to verify shape and dimensions
B-5.03.02	select and use tools and equipment such as routers, band saws, shapers, jointers, moulders and lathes
B-5.03.03	select and change cutting tool components such as blades, knives and router bits
B-5.03.04	read grain direction to avoid tear-outs
B-5.03.05	use jigs and templates to profile solid wood
B-5.03.06	secure project to jig using holding devices such as clamps and stops
B-5.03.07	set up proper stock feeders to accommodate width and thicknesses of solid wood

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Sub-task

B-5.04 Breaks out sheet materials.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

B-5.04.01	develop and review cut list to optimize material according to job specifications
B-5.04.02	determine edge treatment and make necessary adjustments to cut list
B-5.04.03	determine type of sheet material required and availability of stock
B-5.04.04	select and use tools and equipment such as panel saws, CNC machining centres, table saws
B-5.04.05	ensure panel saw blades are sharp and scoring blades are aligned

Sub-task

B-5.05 **Machines sheet materials.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

B-5.05.01	review cut list and edge treatments according to job specifications
B-5.05.02	ensure panels are square, cut to size and chip free
B-5.05.03	select, apply and trim edge treatment using tools and equipment such as edge bander and T-moulding machine
B-5.05.04	select and use tools and equipment such as edge banders, shapers, CNC routers, line drills and edge sanders
B-5.05.05	use jigs and templates to shape sheet materials
B-5.05.06	select tools and equipment accessories such as router bits and blades
B-5.05.07	drill and route panel for backs and shelves

Sub-task

B-5.06 **Machines joints.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

B-5.06.01	review cut list and machining details to ensure they meet job specifications
B-5.06.02	select joints such as dowel, biscuit, dovetail, finger and cam fasteners
B-5.06.03	select and use tools and equipment such as biscuit joiners, drills, CNC routers, dovetail routers and dado blades to create joints
B-5.06.04	use templates for placement and accuracy of repetitive joints

Sub-task

B-5.07 **Performs preliminary sanding.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

B-5.07.01	select abrasive grit according to job requirements to minimize future sanding
B-5.07.02	select and use tools and equipment such as scrapers, hand sanders, pneumatic sanders and wide belt sanders
B-5.07.03	sand in appropriate grain direction according to task and material
B-5.07.04	check thickness using tools and equipment such as callipers and machinist rule according to job specifications

Task 6 Machines components using automated equipment.

Context Automated equipment includes CNC machining centres and edge banders. It can be set up, programmed and operated by cabinetmakers to produce pieces accurately and efficiently. Cabinetmakers are expected to have a working knowledge of this equipment, but would require training specific to each machine's manufacturer.

Required Knowledge

K 1	types of automated equipment such as CNC machining centres, edge banders and CNC beam saws
K 2	computer applications and basic CNC programming
K 3	limitations of automated equipment
K 4	CAD and CAM software and drawings
K 5	automated equipment adjustment procedures
K 6	limitations and selection of appropriate process for the job

Sub-task

B-6.01 **Sets up automated equipment.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

B-6.01.01	review drawings and specifications to determine machining requirements
B-6.01.02	select, load and run program according to requirements
B-6.01.03	program or modify parameters according to requirements
B-6.01.04	select tooling according to material being processed
B-6.01.05	install tool according to manufacturer's specifications
B-6.01.06	run test piece and adjust settings or programming of equipment

Sub-task

B-6.02 **Operates automated equipment.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

B-6.02.01	inspect material to identify flaws and defects
B-6.02.02	load and unload material according to the automated equipment capacity
B-6.02.03	check periodically for performance problems such as chipping and burning
B-6.02.04	correct performance problems such as chipping and burning to obtain processed product according to quality specifications

Trends	New technology such as machining centres, flexible materials and improved adhesives better enables the creation of curved components.
Related Components (including, but not limited to)	**Forming:** store and office fixtures, walls, chair backs, window treatment, railings, mouldings, columns. **Laminating:** cabinet door panels, table tops, edge treatments, butcher block tops, stair components.
Tools and Equipment	Hand tools, clamping devices, stationary power tools and equipment, portable power tools, pneumatic tools and equipment, PPE and safety equipment.

Task 7 Creates curved components using wood and composite materials.

Context Cabinetmakers produce curves and irregular shapes from wood and composite materials for use in products such as railings, crown mouldings, store and office fixtures, and window treatments. This process includes creating layouts for curved components, building forms, as well as bending and laminating solid and composite material.

Required Knowledge

K 1	form materials such as plywood, steel and solid wood
K 2	types of form construction such as shaped walls and two-part moulds
K 3	types of fasteners such as screws, nails and staples
K 4	wood and composite material properties such as density, bendability and flexibility
K 5	sequence of lamination
K 6	spring-back of curved laminating materials
K 7	types of clamps such as band, C, edge and bar
K 8	types of joints used in laminating such as scarf and butt
K 9	final sizing techniques
K 10	moisture content of woods
K 11	methods of bending wood such as steam method and heat method

K 12	forming curved components with vacuum bag
K 13	types of adhesives such as polyvinyl acetate (PVA), contact cement and epoxies
K 14	how to kerf material to accommodate appropriate radius
K 15	length of curing time required for different materials and adhesives
K 16	length of steaming time required for different thicknesses and species of wood

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Sub-task

C-7.01 Builds forms.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

C-7.01.01	select material such as plywood, particle board and MDF to build the form
C-7.01.02	determine shape using applied geometry to create the form
C-7.01.03	select and use layout tools such as compasses, trammel points and protractors
C-7.01.04	use templates and layouts according to drawings
C-7.01.05	apply adhesives and fasteners according to application
C-7.01.06	apply release agents to facilitate adhesive removal
C-7.01.07	match type of form to application
C-7.01.08	select and use tools and equipment such as band saws, jigsaws, table saws and routers to create form components

---

Sub-task

C-7.02 Performs curved laminating.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

C-7.02.01	select and use appropriate clamping method
C-7.02.02	determine laminating requirements according to drawings and job specifications

C-7.02.03	select and sort material such as bendable plywood, veneers and hardwood according to requirements
C-7.02.04	apply adhesive, fasteners and clamps according to application
C-7.02.05	laminate in proper sequence

Sub-task

C-7.03 Steam-forms wood.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	no	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

C-7.03.01	determine steam-form wood requirements according to drawings, job specifications and wood properties
C-7.03.02	build steam box to accommodate material according to size requirements
C-7.03.03	calculate length of time required for steaming depending on material thickness and species
C-7.03.04	clamp wood to form after steaming and until cured

Task 8 Laminates wood and composite materials.

Context The proper sequence and arrangement of pieces is critical when laminating wood and composite materials. Proper selection and use of adhesives and clamping devices will ensure quality lamination.

Required Knowledge

K 1	types of laminated products such as butcher block tops, flat layers, tables and panels
K 2	common laminating procedures and sequence of lamination
K 3	common laminating problems such as splits and sunken joints
K 4	dimensions of materials to be laminated
K 5	grain direction of materials to be laminated
K 6	types of adhesives such as PVA, epoxies, foodsafe, waterproof and urea formaldehyde adhesives
K 7	properties of adhesives such as open time, setup time and curing time

K 8	wood properties such as absorption rate, presence of oils and moisture content
K 9	adhesive application methods such as rolling, brushing and spraying
K 10	clamping techniques
K 11	density of woods and composite materials

Sub-task

C-8.01 Arranges materials for laminating.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

C-8.01.01	determine finish component size according to drawings and job specifications
C-8.01.02	check for defects such as knots, checks, out-of-square and cracks
C-8.01.03	match colour and grain
C-8.01.04	alternate growth ring orientation to prevent warping and cupping

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Sub-task

C-8.02 Applies adhesive for laminating.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

C-8.02.01	select adhesive according to end use and process
C-8.02.02	determine method of application such as rolling, brushing and spraying
C-8.02.03	determine amount of adhesive according to type and quantity of wood
C-8.02.04	spread adhesive such as PVA and epoxies evenly over joint surface

Sub-task

C-8.03 Clamps pieces together.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

C-8.03.01	select and use clamps such as bar, C and pneumatic carriers
C-8.03.02	use appropriate clamping pressure according to material thickness and density
C-8.03.03	adjust pieces using tools and equipment such as dead blow hammer and pneumatic pressure bar to ensure alignment prior to final clamping pressure
C-8.03.04	remove excess glue or squeeze out using cabinet scrapers
C-8.03.05	remove clamps after adhesives have set

Trends

Some traditional species of veneer woods (such as Honduras mahogany) are declining, resulting in the introduction of new types of veneers that are in greater supply. Reconstituted veneers are becoming more common, providing options to customers. New laminate finishes are being produced by manufacturers, including pre-finished real wood surfaces. Also, imitation wood laminates are more closely mimicking real wood.

Stationary tools are becoming larger to accommodate demand for larger sheet goods.

Related Components (including, but not limited to)

Substrates: MDF, particle board, veneer core.

Veneers: wood, reconstituted.

Laminates: plastic, metal, wood.

Tools and Equipment

Hand tools, portable power tools, spray equipment, stationary power tools and equipment, PPE and safety equipment.

Task 9 Applies veneers.

Context

Cabinetmakers must understand the methods and techniques used for bonding veneer to a variety of substrates according to the design requirements and specifications. For the purpose of this analysis, veneers are made of wood and do not have any backing.

Required Knowledge

K 1	species of veneers such as oak, cherry and maple
K 2	reconstituted veneers
K 3	methods of cutting veneers
K 4	cuts of veneers such as rotary, flat and quarter
K 5	matching veneers such as book, slip and diamond
K 6	veneer storage techniques
K 7	types of adhesives
K 8	types of substrates
K 9	veneer trimming techniques

K 10	wood grain characteristics related to trimming
K 11	acceptable defects depending on species and grade
K 12	tools and equipment such as edge gluers, guillotines, plug cutters, hand stitchers and veneer presses
K 13	balanced construction
K 14	edge treatment of substrate

Sub-task

D-9.01 Selects veneers.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

D-9.01.01	identify species of veneers such as oak, cherry and maple
D-9.01.02	identify different cuts such as rotary, flat and quarter for matching requirements
D-9.01.03	identify acceptable or unacceptable defects and aesthetic appearances depending on species and grade
D-9.01.04	ensure quantity of product required for project is available

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Sub-task

D-9.02 Prepares veneer and substrate.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

D-9.02.01	calculate the optimum size of veneer leaves for the application and appearance
D-9.02.02	cross cut veneer to length using tools and equipment such as mitre saws and sheers
D-9.02.03	clip veneer parallel and to size using tools and equipment such as a guillotine
D-9.02.04	join veneer pieces by taping or by using tools and equipment such as edge gluers and stitchers

D-9.02.05	repair veneer by taping or by using tools and equipment such as hand stitchers
D-9.02.06	cut substrate to size
D-9.02.07	sand substrate using tools and equipment such as a thickness sander
D-9.02.08	chemically relax veneer to ensure suitability for laminating

---

Sub-task

D-9.03 **Adheres veneers to substrates.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

D-9.03.01	apply adhesives using tools and equipment such as glue rollers and glue spreaders according to manufacturers' specifications and taking into consideration bleed-through
D-9.03.02	press veneer to the substrate using methods such as vacuum press, hot press and cold press
D-9.03.03	perform visual inspection of veneer for delamination and other defects, and repair if possible

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Sub-task

D-9.04 **Performs final clean-up of veneered panels.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

D-9.04.01	scrape veneer seams to remove tape, stitch residue and excess glue using tools and equipment such as glue scrapers and belt sanders
D-9.04.02	trim overhanging edges using tools and equipment such as rasps, sanding blocks, files, routers, planes and trimmers

Task 10 Applies laminate sheets.

Context Cabinetmakers apply laminate sheets to a variety of substrates to provide a durable, sanitary and decorative finish. For the purpose of this analysis, veneers with backing are considered laminate sheets as the handling techniques are the same. Many countertops are now supplied by companies that specialize in post-formed countertop manufacturing.

Required Knowledge

K 1	types, finishes, sizes and uses of laminate sheets
K 2	laminate sheet properties such as flexibility and grades
K 3	types of adhesives
K 4	types of substrates
K 5	hazards associated with adhesives
K 6	trimming techniques
K 7	solvents and cleaners
K 8	tools and equipment for laminating such as laminate knives, routers and j-rollers
K 9	environmental conditions affecting laminate such as temperature and humidity
K 10	balanced construction
K 11	manufacturers' guidelines concerning inside radius and cut-outs
K 12	edge treatment of substrate

Sub-task

D-10.01 Selects laminate sheets.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

D-10.01.01	choose grade and thickness of laminate sheets according to application and job specifications such as general purpose (GP), vertical grade (V32), acid resistant and fire rated
D-10.01.02	inspect for flaws and damage such as scratches and colour variation

Sub-task

D-10.02 Prepares laminate sheets and substrate.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

D-10.02.01	cut laminate sheets according to specifications using tools and equipment such as laminate knives, routers and saws
D-10.02.02	handle laminate sheets with care to prevent damage
D-10.02.03	joint laminate edges for seaming purposes using tools and equipment such as jointers, routers and hand planes
D-10.02.04	cut substrate to size

Sub-task

D-10.03 Adheres laminate sheets to substrate.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

D-10.03.01	apply adhesives such as PVA and contact cement using tools and equipment such as rollers, glue spreaders, glue sprayers and brushes, and according to manufacturers' specifications
D-10.03.02	press laminate to the substrate by methods such as vacuum press, hot press and cold press
D-10.03.03	apply appropriate pressure to laminate when using contact cement using tools and equipment such as j-rollers, pinch rollers and rubber mallets
D-10.03.04	achieve a tight seam using appropriate methods

Sub-task

D-10.04 Performs final clean-up of laminated sheets.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

D-10.04.01	trim excess laminate using tools and equipment such as laminate trimmers, hand planes and files
D-10.04.02	file and sand laminate edges to make flush with substrate
D-10.04.03	bevel finished laminate edge using tools and equipment such as bevel trimmers, files and sanding blocks
D-10.04.04	remove excess adhesives using solvents and specialized cleaners

Trends

There is an increased variety of specialty cabinet and furniture hardware such as soft-closing door hinges and drawer slides, and they continue to evolve. There is a bigger emphasis on more environmentally friendly practices such as using adhesives and recycled materials, which bring their own challenges as they are new products and may not be proven. CNC machining continues to make in-shop assembly faster, more consistent and accurate.

Related Components (including, but not limited to)

Cabinet components: gables, tops and bottoms, bases, dividers, shelves, panels, slab doors, backs, hardware.

Furniture components: legs, arms, backs, aprons, seats, tops.

Wood components: face frames, five-piece doors, drawer boxes, decorative mouldings.

Architectural millwork: sidelights, doors, door frames, wainscoting, store fixtures, wall panels, columns, mouldings.

Tools and Equipment

See Appendix A.

Task 11 Assembles cabinets and furniture.

Context

Cabinets are wood or composite products that are permanently fastened in place while furniture is generally freestanding. Cabinetmakers perform assembly of cabinets and furniture in the shop prior to shipping them to the site. They must always be aware of the conditions and accessibility of the installation site.

Required Knowledge

K 1	standard measurements such as height of cabinets, counters, chairs, tables and desks
K 2	properties such as expansion, contraction and photosensitivity of solid wood and sheet goods
K 3	types of adhesives
K 4	types of joints such as dovetail, mortise and tenon, and dados
K 5	types of fasteners such as biscuits, dowels, screws and assembly fittings

K 6	types of doors such as raised panel, flat panel, tambour and slab
K 7	types of door and drawer front applications such as overlay, inset and retractable
K 8	types of door hinges such as concealed, butt, piano and scissor
K 9	types of drawer hardware such as integrated slides, full-extension slides and soft-closing
K 10	door and drawer front clearances
K 11	face frame construction
K 12	cabinet components such as gables, tops, bottoms, doors and drawers
K 13	drawer components such as sides, bottoms and backs
K 14	cabinet door components such as stiles, rails and panels
K 15	types of furniture such as tables, chairs, beds and desks
K 16	furniture hardware such as drop leaf hinges, table slides and swivels
K 17	furniture components such as legs, aprons, arms and backs
K 18	32 mm system
K 19	on-site installation considerations
K 20	shipping and handling requirements
K 21	sequence of assembly which takes into consideration factors such as finishing requirements, laminating and site assembly

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Sub-task

E-11.01 Assembles cabinet components.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

E-11.01.01	select and sort cabinet components such as gables, tops, bottoms and backs according to cabinet requirements
E-11.01.02	ensure components are true, square and cut to accurate size using tools and equipment such as measuring tapes and squares
E-11.01.03	apply adhesive to joints in an adequate amount to provide strength and minimize clean-up
E-11.01.04	join sub-assembly components such as toe kick boxes and drawer boxes using tools and equipment such as pneumatic staplers, box clamps and biscuit joiners, and fasteners such as biscuits, dowels and screws

E-11.01.05	join cabinet components using tools and equipment such as clamps, pneumatic nailers, drills and dowel insertion machines, and fasteners such as biscuits, dowels, screws and assembly fittings
E-11.01.06	check final assembly for square and accuracy, and adjust as necessary
E-11.01.07	remove excess adhesive for reasons such as aesthetics, prevention of staining of wood and damage to finished product

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Sub-task

E-11.02 Assembles furniture components.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

E-11.02.01	select and sort furniture components such as legs, aprons, rails, arms and backs according to assembly requirements, and grain and colour considerations
E-11.02.02	ensure components are true, square and cut to accurate size using tools and equipment such as measuring tapes and squares
E-11.02.03	confirm all components for proper fit and adjust joints as necessary
E-11.02.04	select fastening methods to allow for wood movement
E-11.02.05	apply adhesive to joints in an adequate amount to provide strength and minimize clean-up
E-11.02.06	join sub-assembly components such as web frames and table pedestals, using tools and equipment such as clamps and biscuit joiners, and fasteners such as biscuits, dowels and screws
E-11.02.07	join furniture components using tools and equipment such as clamps, pneumatic nailers and drivers, and fasteners such as biscuits, dowels, pocket screws and assembly fittings
E-11.02.08	check assembly for square and accuracy, and adjust as necessary
E-11.02.09	remove excess adhesive for reasons such as aesthetics, prevention of staining of wood and damage to finished product

Sub-task

E-11.03 Assembles wood components.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

E-11.03.01	select and sort wood components such as stiles and rails, veneered panels, solid wood panels and drawer parts according to assembly requirements, and grain and colour considerations
E-11.03.02	ensure components are true, square and cut to accurate size using tools and equipment such as measuring tapes and squares
E-11.03.03	confirm all components for proper fit and adjust joints as necessary using tools such as chisels and block planes
E-11.03.04	select fastening and containment methods such as using slotted hardware and foam panel spacers to allow for wood movement
E-11.03.05	apply adhesive to joints in an adequate amount to provide strength and minimize clean-up
E-11.03.06	join wood components using tools and equipment such as frame clamps, pneumatic nailers, and mallets, and fasteners such as biscuits and headless pins
E-11.03.07	check assembly for square and accuracy, and adjust as necessary
E-11.03.08	remove excess adhesive for reasons such as aesthetics, prevention of staining of wood and damage to finished product
E-11.03.09	trim joints flush and to desired size according to assembly requirements

Sub-task

E-11.04 Combines components into final assemblies.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

E-11.04.01	select and use tools and equipment such as tape measures, clamps, pneumatic nailers, screwdrivers, drills, routers, mortising jigs and door handle jigs according to application
E-11.04.02	use fasteners such as biscuits, brad nails, glue blocks, splines, wood screws and machine screws

E-11.04.03	install face frame onto case work according to design requirements
E-11.04.04	apply decorative moulding and edging considering alignment and placement
E-11.04.05	install specialty hardware such as drop leaf hinges, table slides, swivels and retractable door hardware according to manufacturers' specifications and to achieve desired function
E-11.04.06	install functional hardware such as drawer slides, cabinet hinges and locks according to manufacturers' specifications and to achieve desired function
E-11.04.07	install decorative hardware such as handles, knobs and pulls according to aesthetic placement and design intent
E-11.04.08	recognize potential challenges of hardware placement that could impede operation, and adjust as necessary
E-11.04.09	install drawer boxes using hardware such as slides and guides for smooth operation
E-11.04.10	install doors and drawer fronts, and adjust for alignment and clearances
E-11.04.11	install glass and decorative panels into framework using fastening methods such as retaining strips, silicone and wood stops
E-11.04.12	test and evaluate all components for proper operation, aesthetic appeal and installation considerations

Task 12 — Assembles architectural millwork products.

Context Cabinetmakers assemble architectural millwork products in the shop because it is practical, efficient and cost effective, and reduces installation time. They must always be aware of the conditions and accessibility of the installation site.

Required Knowledge

K 1	types of architectural millwork components such as door frames, sidelights, wainscoting, crown and base mouldings, columns, wall cladding and window frames
K 2	types of architectural fixtures such as store and office fixtures, bench and custom display cases, and tables
K 3	joints such as butt, rabbet, and mortise and tenon
K 4	types of fasteners such as concealed fasteners, screws, toggle fasteners, lockable biscuits and flat metal brackets
K 5	architectural specifications such as fire-rated products and accessibility requirements
K 6	sequence of assembly in the shop and on-site

K 7	glass installation for products such as display cases and sidelights
K 8	architectural quality assurance guidelines
K 9	properties such as expansion, contraction and photosensitivity of solid wood and sheet goods
K 10	shipping and handling requirements

Sub-task

E-12.01 Assembles architectural millwork components in the shop.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

E-12.01.01	fabricate components such as doors, door frames, sidelights, transoms, wall panels and columns according to design requirements
E-12.01.02	combine components into larger sections using fasteners and clamps to simplify on-site installation
E-12.01.03	confirm component accuracy and fit using tools and equipment such as tape measures and squares

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Sub-task

E-12.02 Assembles architectural fixtures in the shop.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

E-12.02.01	construct architectural fixtures according to design drawings and hardware requirements
E-12.02.02	factor in unique challenges of custom applications such as electrical and mechanical components and special site conditions
E-12.02.03	join components using tools and equipment such as clamps, pneumatic nailers, drills and dowel insertion machines, and fasteners such as biscuits, dowels, screws and assembly fittings
E-12.02.04	verify final dimensions of assembled product

E-12.02.05	combine architectural fixtures into sections taking into consideration accessibility of the installation site such as elevators and door openings
E-12.02.06	incorporate glass, steel and other decorative elements into the fixture

Trends	A current trend in mass production is the increased use of automated finishing and drying machines. In custom work, finishing is becoming more complicated with multi-step processes. There is increased consumer and government interest in environmentally-friendly finishing materials.
Related Components (including, but not limited to)	Cabinets, furniture, architectural millwork, stairs.
Tools and Equipment	Finishing equipment, hand tools, portable power tools, stationary power tools, pneumatic tools, PPE and safety equipment.

Task 13 Prepares surface for finishing.

Context Preparing the surface is important to ensure products are ready to accept the final finish.

Required Knowledge

K 1	material properties such as species of wood, cuts of wood and grain
K 2	material to be finished
K 3	abrasive supplies such as sandpaper, scrapers and steel wool
K 4	sanding procedures
K 5	types of sandpaper such as aluminium oxide and garnet
K 6	abrasive grits such as 100, 120 and 220
K 7	scraping procedures to remove glue or machine marks
K 8	sequence in which the parts are to be sanded
K 9	prevention and removal of contaminants such as silicone, solvents and excess glue

Sub-task

F-13.01 **Repairs minor imperfections.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

F-13.01.01	check material for defects such as excess adhesive, contaminants, blemishes and water spots
F-13.01.02	select and use tools and equipment such as scrapers, pneumatic sanders, putty knives, irons, sandpaper and rags
F-13.01.03	sand and scrape excess glue and blemishes
F-13.01.04	fill nail holes and defects with auto body filler, wood filler and lacquer sticks
F-13.01.05	sand material to remove sharp edges
F-13.01.06	steam wood to remove dents

Sub-task

F-13.02 **Performs final sanding of surfaces.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

F-13.02.01	sand in appropriate grain direction to remove cross grain marks
F-13.02.02	select and use tools and equipment such as scrapers, sanding blocks and orbital sanders
F-13.02.03	match proper grit of sandpaper to finish
F-13.02.04	remove excess dust using compressed air, tack cloths and dry rags

Task 14 Finishes wood products.

Context Cabinetmakers should know the basics of finishing. It is important to understand how finishing materials are applied and how they affect the final product.

Required Knowledge

K 1	finishing materials such as lacquers, paints and stains
K 2	additives such as solvents, dryers and retarders
K 3	WHMIS
K 4	hazards associated with storing, preparing and applying finishes
K 5	manual finishing techniques such as brushing, wiping and rolling
K 6	finishing materials that can be sprayed such as lacquers, stains, glazes and paints
K 7	finishing material properties such as drying time, appearance and durability
K 8	wood properties such as stability and absorption
K 9	end user hazards associated with finishing products such as flammability, off gassing and toxicity
K 10	finishing problems such as blush, pin-holes, fish eye and orange peel, and possible solutions
K 11	spray finishing techniques
K 12	spraying systems such as HVLP and air assisted/airless
K 13	preparation of surface between coats such as scuff sanding
K 14	methods of repairing finish imperfections or damage
K 15	methods of conditioning

Sub-task

F-14.01 Prepares finishing materials.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

F-14.01.01	select finishing materials according to job specifications
F-14.01.02	measure, mix and filter finishing materials according to manufacturers' and job specifications
F-14.01.03	test and alter finishing materials for considerations such as sheen, viscosity, colour and performance

Sub-task

F-14.02 Applies finishing material manually.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

F-14.02.01	select and use tools and equipment such as brushes, sponges and rags for applying finishing material manually to achieve the desired finish
F-14.02.02	test application tools with finishing material to ensure compatibility of tool, technique and material
F-14.02.03	confirm product is cleaned, sanded and ready to be finished
F-14.02.04	comply with manufacturers' specifications and MSDS to select application technique
F-14.02.05	arrange clean and safe area for applying and drying considering location and environment

Sub-task

F-14.03 Sprays on finishing material.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

F-14.03.01	select and use spray equipment for applying finishing material to achieve the desired finished properties such as colour, sheen and build
F-14.03.02	identify, test and adjust spray equipment with finishing material to ensure compatibility, set up and technique
F-14.03.03	confirm product is cleaned, sanded and ready to be finished
F-14.03.04	comply with manufacturers' specifications and MSDS to ensure safe and effective application
F-14.03.05	arrange clean and safe area for applying and drying considering location and environment
F-14.03.06	check product for finishing problems such as pin-holes, fish eyes and orange peel

Trends	Cabinetmakers use different types of fasteners and adhesives to help them be more time and cost efficient when installing products on site. They also use new tools and equipment that help lift, position and level the cabinets. Improved measuring devices such as laser levels make installations easier.
Related Components (including, but not limited to)	**Cabinets:** carcasses, doors, drawers, bases, fillers, countertops, hardware. **Architectural millwork:** mouldings, panels, columns, store and office fixtures, hardware, doors and window frames.
Tools and Equipment	Hand tools, portable power tools, scaffolding equipment, measuring and layout equipment, pneumatic tools, PPE and safety equipment.

Task 15 Modifies products to site conditions.

Context Products often require modifications on-site prior to final installation. Plumbing, electrical and heating access holes may need to be cut and scribing is often done to ensure the product is tight fitting to uneven surfaces. Final adjustments are also done by the cabinetmaker to ensure that the product is functional and aesthetically pleasing.

Required Knowledge

K 1	types of access holes such as electrical, heating and plumbing
K 2	concerns related to working with utilities such as electrical, heating and plumbing
K 3	sequence of scribing operations such as setting products in place, marking the profile and cutting the profile
K 4	components that may require adjustments such as door and drawer hardware
K 5	types of hardware such as hinges, slides, locks and handles

Sub-task

G-15.01 Cuts access holes on site.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

G-15.01.01	determine reference point for locating access holes by reviewing drawings
G-15.01.02	consult with customer for additional modifications
G-15.01.03	create holes using tools and equipment such as jigsaws, measuring tapes, levels, drills and routers for job requirements

Sub-task

G-15.02 Scribes product to fit on site.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

G-15.02.01	set products in place ensuring product is plumb and level
G-15.02.02	recognize untrue wall, ceiling and floor surfaces
G-15.02.03	mark profile of surface using tools and equipment such as compasses, pencils and blocks, and contour gauges
G-15.02.04	protect surface of product using tape and cardboard
G-15.02.05	modify profile using tools and equipment such as planes, jigsaws and belt sanders

Task 16 — Installs cabinets and countertops.

Context Cabinets and countertops often arrive at the installation site in sections and have to be assembled and fastened in the proper sequence. Cabinetmakers have to securely install cabinets and countertops plumb and level to ensure proper operation of hardware and cabinet components.

Required Knowledge

K 1	cabinet construction
K 2	site conditions such as humidity and temperature
K 3	sequence of on-site assembly as indicated on shop drawings
K 4	sequence of work done by other trades
K 5	fasteners such as screws, nails, wall anchors, ready to assemble (RTA) fasteners and draw bolts
K 6	types of countertops such as post form and self edge
K 7	wall, ceiling and floor construction and finish
K 8	utilities in wall, floor and ceiling
K 9	installation techniques for fastening solid wood tops

Sub-task

G-16.01 Performs final on-site assembly and fastening of cabinets and countertops.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

G-16.01.01	record original condition of installation site, including humidity, to prevent possible liability due to damage caused by others
G-16.01.02	protect floors and surrounding areas to prevent damage from delivery and installation of product
G-16.01.03	check site for conditions such as level floor, plumb walls and square corners to ensure correct installation
G-16.01.04	locate structural components such as blocking, studs, joists and trusses, and ensure they are appropriate for the installation
G-16.01.05	locate utilities such as in-floor heating, electrical wiring, data cables and plumbing components

G-16.01.06	assemble cabinet components prior to installation if necessary using tools and equipment such as clamps, drills and air nailers
G-16.01.07	position, level and fasten cabinets on walls and floor using tools such as laser levels, hand levels, drills and measuring tapes to ensure cabinets are flush and aligned
G-16.01.08	install trim components such as crown moulding, baseboard and spindles according to design drawings
G-16.01.09	fit, assemble and fasten countertop components to cabinets using tools and equipment such as scribing tools, drills, planes and belt sanders
G-16.01.10	apply adhesives if necessary to secure countertop

Sub-task

G-16.02 Finalizes installation of cabinets and countertops.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

G-16.02.01	adjust all doors, drawer fronts and hardware to enhance visual appearance and ensure smooth operation
G-16.02.02	check and repair imperfections such as scratches, dents and damaged components
G-16.02.03	clean cabinets and countertop using cleaners such as methyl hydrate, thinner and green cleaners
G-16.02.04	select and apply caulking and silicone according to compatibility with wall finish to prevent water damage to cabinets
G-16.02.05	install handles and accessory hardware according to drawings and specifications, and customer preference
G-16.02.06	clean worksite and return site to original condition while protecting installed millwork
G-16.02.07	record humidity, temperature and condition of work site, cabinets and countertops to verify a complete and satisfactory installation
G-16.02.08	seal any cut-outs or contact with concrete surfaces

Task 17 — Installs architectural millwork products and mouldings.

Context Cabinetmakers use various techniques, fasteners and adhesives to assemble and install architectural millwork products that arrive on the installation site in sections. Often, mouldings are installed to enhance the overall appearance of the end product.

Required Knowledge

K 1	architectural millwork products such as wainscoting, doors, frames and store fixtures
K 2	hardware
K 3	wall and ceiling construction and finish
K 4	fasteners such as screws, toggles and wall anchors
K 5	blind fasteners such as ledger strips, French cleats and keyhole slots
K 6	types of mouldings such as base, case, crown and chair rail
K 7	joints such as mitre, cope, butt and scarf
K 8	adhesives
K 9	utilities inside walls, ceilings and floors

Sub-task

G-17.01 **Performs final on-site assembly and fastening of architectural millwork products.**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

G-17.01.01	record original condition of installation site to prevent possible liability due to damage caused by others and environmental conditions
G-17.01.02	protect floors and surrounding areas to prevent damage from delivery and installation of product
G-17.01.03	check site for conditions such as level floor, plumb walls, square corners, and humidity and temperature
G-17.01.04	locate structural components such as studs, joists, trusses and blocking
G-17.01.05	locate utilities such as in-floor heating, electrical wiring, data cables and plumbing components

G-17.01.06	assemble architectural components prior to installation if necessary using tools and equipment such as drills and air nailers
G-17.01.07	fit, level and fasten architectural millwork products on walls, ceiling and floor using tools such as levels, saws, and air nailers to ensure products are flush and aligned
G-17.01.08	apply panel adhesives, sealants, glues and caulkings
G-17.01.09	install passage doors and hardware according to door and hardware schedule

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Sub-task

G-17.02 Installs mouldings.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

G-17.02.01	locate structural components such as studs, joists and trusses
G-17.02.02	lay out mouldings and wainscoting according to drawings and to provide balanced appearance
G-17.02.03	cut and cope mouldings using tools and equipment such as mitre saws and coping saws to ensure tight joints
G-17.02.04	position and secure mouldings using tools and equipment such as pneumatic tools and levels, and adhesives
G-17.02.05	conceal nail and screw holes using colour match putty and caulking

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Sub-task

G-17.03 Finalizes installation of architectural millwork products.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

G-17.03.01	adjust doors, drawer fronts and hardware to enhance visual appearance and ensure smooth operation
G-17.03.02	check and repair imperfections such as scratches, dents and damaged components

G-17.03.03	clean architectural millwork products using cleaners such as methyl hydrate, thinner and green cleaners
G-17.03.04	apply caulking and silicone according to compatibility with wall finish to prevent water damage to architectural millwork products
G-17.03.05	install handles and accessory hardware according to drawings, specifications and customer preference
G-17.03.06	finalize installation of passage doors by applying components such as door stops, handles, glass and kick plates
G-17.03.07	reinstall removable panels and install grommets following installation of utilities such as data cables, electrical and telephone
G-17.03.08	record humidity, temperature, and condition of work site, architectural millwork products and mouldings to verify a complete and satisfactory installation
G-17.03.09	clean worksite and return site to original condition while protecting installed millwork

BLOCK H — SPECIALIZED OPERATIONS

Trends	Consumer demand and changing technology has resulted in an increased need for specialized skills. Some of the tasks for these specialized areas are now being performed by automated equipment, enabling an increase in efficiency. Cabinetmakers are using more recycled materials when fabricating and restoring woodwork. Customer demand has resulted in a large variety of options for custom countertops causing cabinetmakers to be innovative in countertop design and fabrication.
Related Components (including, but not limited to)	Stair components, custom countertops, furniture, spindles, sinks and mouldings.
Tools and Equipment	Hand tools, portable power tools, stationary power tools, automated equipment, layout tools, PPE and safety equipment.

Task 18 — Builds stairs and balustrades.

Context This task focuses on the activities that are specific to building stairs and balustrades. Cabinetmakers should be able to use their acquired skills to lay out, build and install stairs and balustrades; however, this is considered to be a specialized skill.

Required Knowledge

K 1	considerations involved in building stairs such as required headroom, and rise and run ratios
K 2	building codes
K 3	stair styles such as straight, winders, spiral and curved
K 4	stair layout
K 5	site accessibility and conditions
K 6	machining techniques
K 7	joinery techniques such as doweling, mortising and tenonning, and dadoing
K 8	stair components such as treads, risers, hand rails, posts, stringers and volutes

K 9	stair terminology
K 10	wood properties such as strength, shrinkage and warping
K 11	stair assembly techniques
K 12	clamping techniques
K 13	sequence of assembly in the shop and on-site
K 14	stair construction
K 15	sequence of work done by other trades
K 16	wall, floor and ceiling construction and finish

Sub-task

H-18.01 Lays out stair and balustrade components.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	no	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

H-18.01.01	check stairwell dimensions such as opening, total rise and allowable headroom to ensure compliance with jurisdictional building codes
H-18.01.02	select and use layout tools such as framing squares, angle finders and trammel points
H-18.01.03	perform mathematical calculations to determine rise/run ratio, radius and spacing of balustrades
H-18.01.04	prepare full scale stair layouts to verify location of components such as landings, newel posts, handrails and balustrades

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Sub-task

H-18.02 Machines stair and balustrade components.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	no	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

H-18.02.01	select stock to ensure quality and uniformity
H-18.02.02	use jigs and templates to route stringers to accept treads and risers
H-18.02.03	select and use tools and equipment such as routers, saws, jointers and planers

H-18.02.04	shape balusters, handrails and newel posts by using equipment such as lathes, shapers, moulders and saws to suit customer requirements
H-18.02.05	operate automated machines to increase speed and accuracy of machining of material
H-18.02.06	machine balusters to accept dowels, if required, to ensure proper alignment and adequate strength at installation
H-18.02.07	machine treads to accept baluster dowels and risers in the shop or on the installation site

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Sub-task

H-18.03 Assembles stairs and balustrades.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	no	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

H-18.03.01	form and bend components for curved stringers and hand rails according to drawings and site conditions, as required
H-18.03.02	use adhesives, fasteners and wedges to ensure strong, silent stair construction
H-18.03.03	select and use tools and equipment such as clamps, pneumatic tools and drills
H-18.03.04	construct stairs in sections in the shop, if possible, to save time on the installation site

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Sub-task

H-18.04 Installs stairs and balustrades.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	no	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

H-18.04.01	reassemble stair components on-site using adhesives, shims and fasteners such as screws, nails and bolts
H-18.04.02	select and use assembly tools such as hand tools, portable power tools, pneumatic tools and clamps
H-18.04.03	locate studs and floor joists to secure stairs and components in place

H-18.04.04	position assembled stairs in place according to drawings and site conditions
H-18.04.05	level and plumb stairs and balustrades using tools and equipment such as levels, laser levels and shims
H-18.04.06	adjust stairs according to site conditions such as thickness of finished floors and square of opening
H-18.04.07	secure stairs, balustrades and newel posts in place to located studs, joists or stairs

Task 19 — Works with solid surface material and custom countertops.

Context Solid surfaces are composite materials used mainly for countertops, windowsills and backsplashes. Cabinetmakers should be able to use their acquired skills to apply and repair solid surfaces; however, it is considered to be a specialized skill and requires certification in order to validate warranties.

Required Knowledge

K 1	manufacturers' certification program requirements to work with and warranty solid surfaces
K 2	solid surface material dimensions such as sheet sizes and thicknesses
K 3	solid surface material properties that vary by manufacturer such as brittleness, colour, photo and chemical sensitivity, pliability, and polishing and seaming abilities
K 4	solid surface material adhesives
K 5	manufacturers' specifications
K 6	types of sinks and installation methods
K 7	polishing methods such as wet and dry sanding
K 8	use of solid surface material in custom application

Sub-task

H-19.01 Breaks out materials.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

H-19.01.01	inspect sheets to identify damage, defects and colour variation
H-19.01.02	optimize material according to drawings and cut list
H-19.01.03	cut edging, substrates and solid surface materials using tools and equipment such as saws, routers and CNC machines
H-19.01.04	machine components for hardware and accessories such as counter bolts, biscuits and sinks

Sub-task

H-19.02 Fabricates solid surface material.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

H-19.02.01	apply glue blocks in proper location in preparation for seaming
H-19.02.02	prepare components for seaming by cleaning with methyl hydrate to ensure adequate adhesion
H-19.02.03	assemble substrate using counter top bolts and apply edging using adhesives and fasteners
H-19.02.04	apply adhesive and hold components in place with spring clamps closely spaced to ensure a seamless joint
H-19.02.05	remove clamps after the adhesive has dried and machine edges according to drawings
H-19.02.06	machine countertop for cut-outs using tools and equipment such as routers and hole saws
H-19.02.07	sand and polish components to required finish according to customer requirements
H-19.02.08	incorporate solid surface material into other materials such as a solid surface edge to a laminate countertop

Sub-task

H-19.03 Installs solid surface material.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

H-19.03.01	cut, fit and scribe solid surface materials using tools and equipment such as routers and sanders
H-19.03.02	seam joints on site
H-19.03.03	sand, polish and clean solid surface materials to ensure seamless joints
H-19.03.04	pre-fit fixtures such as sinks, faucets and cooktops according to manufacturers' specifications
H-19.03.05	secure solid surface materials using adhesives such as silicone and manufacturers' glues
H-19.03.06	repair solid surface material on site using manufacturers' seam kits

Task 20 Creates decorative woodwork.

Context Decorative woodwork is included in the cabinetmaker trade as a specialized skill, either done on its own or applied as part of a product. Marquetry is the assembly of wood pieces to form patterns or images. Wood carving is shaping wood using tools such as chisels and carving knives. Woodturning is the shaping of wood on a lathe.

Required Knowledge

K 1	wood species and properties
K 2	wood characteristics such as grains, movement, colour, burls and figuring
K 3	marquetry assembly processes
K 4	types of carving such as sculpting and relief
K 5	types of carving tools
K 6	types of turning tools

Sub-task

H-20.01 Performs marquetry. (NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
no	no	no	no	NV	NV	no	no	yes	yes	NV	NV	NV

Key Competencies

H-20.01.01	select materials such as wood veneers and ivory according to design and colours and textures of wood
H-20.01.02	cut and shape material pieces using tools and equipment such as scroll saws, knives and sanders
H-20.01.03	tape material pieces to create the chosen design or picture
H-20.01.04	apply adhesive to material pieces and clamp to substrate
H-20.01.05	sand and scrape material pieces to remove excess adhesive and tape
H-20.01.06	finish material pieces as specified by customer

Sub-task

H-20.02 Performs carving. (NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
no	no	no	no	NV	NV	yes	no	yes	yes	NV	NV	NV

Key Competencies

H-20.02.01	identify types of carving such as chip, relief and sculpting
H-20.02.02	select and break out wood and laminated pieces for carving according to species, grain and flaws
H-20.02.03	lay out design on rough piece to guide the carving process
H-20.02.04	remove excess material prior to fine carving
H-20.02.05	secure work piece using clamps or fasteners to prevent piece from moving while carving
H-20.02.06	select and use carving tools and equipment such as carving knives, gouges power carving tools, files, rasps and mallets
H-20.02.07	clean up work piece using tools and equipment such as fine knives, scrapers and sandpaper

Sub-task

H-20.03 Performs woodturning.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	no	no	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

H-20.03.01	determine material requirements such as species and size of wood according to drawings
H-20.03.02	select stock to avoid defects such as cracks, splits and knots
H-20.03.03	remove excess material prior to mounting
H-20.03.04	mount stock onto lathe using face plate or centre-to-centre method to prepare for turning
H-20.03.05	turn stock using tools and equipment such as lathes, copiers and turning tools
H-20.03.06	check size of piece using calliper to verify measurements
H-20.03.07	sand piece at slow speed using various grits of sandpaper to prepare for finish
H-20.03.08	finish piece on lathe, if practical, according to customer requirements

Task 21 Restores woodwork.

Context Restoring woodwork requires the cabinetmaker to repair building components such as furniture, historic windows and doors, cabinets and millwork components. They must also match the new component to the original.

Required Knowledge

K 1	furniture styles such as Chippendale, early French Canadian, Victorian, Westminster and Shaker
K 2	moulding styles
K 3	furniture disassembly and assembly methods
K 4	joinery such as mortise and tenon, rabbet and dovetail
K 5	wood characteristics
K 6	finish removers
K 7	finishes, both new and old

K 8	historical finishing techniques
K 9	adhesives used in woodwork restoration

Sub-task

H-21.01 Repairs woodwork for restoration purposes.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
no	yes	no	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

H-21.01.01	examine damaged woodwork such as windows, furniture and mouldings to determine restoration requirements
H-21.01.02	select materials to match existing woodwork and hardware
H-21.01.03	layout and produce joints such as mortise and tenon, dovetail and rabbet
H-21.01.04	replicate parts to match existing parts using hand and power tools and equipment
H-21.01.05	repair minor imperfections such as scratches, dents and chips
H-21.01.06	maintain the integrity of the pieces (structural and visual) using historic procedures
H-21.01.07	apply adhesives compatible to the existing adhesive
H-21.01.08	scrape, sand and prepare piece for finishing consistent with historic methods
H-21.01.09	install hardware after finishing and adjust as needed

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Sub-task

H-21.02 Refinishes woodwork.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
no	yes	no	yes	NV	NV	yes	yes	yes	yes	NV	NV	NV

Key Competencies

H-21.02.01	strip old finishes to ensure matching of finish of existing and new components
H-21.02.02	maintain the integrity of the piece by matching colour and finishes using methods such as dying wood, and applying stains and oils

H-21.02.03	disguise imperfections by staining, bleaching and toning
H-21.02.04	use finishing tools and equipment according to required characteristics and period of piece

APPENDICES

APPENDIX A — TOOLS AND EQUIPMENT

Hand Tools

bench hook
brushes
burnisher
chalk line
chisels (wood, carving, turning)
clamps (bar, C)
doweling jig
file card
files (wood, metal, laminate)
glass cutter
grease gun
hammer
honing stones
J-roller
level
mallet (rubber, dead blow, wood)
measuring cup
mitre trimmer
moisture meter
nail sets
oilcan
planes (jack, smooth, fore, block, router, rabbet)
pliers (side cutters, linesman, needle nose)
pocket screw jig
pry bar
putty knife
sanding block
saws (back, hack, dovetail, coping, keyhole, hand)
scraper (cabinet, paint)
scratch awl
screwdrivers
spokeshave
utility knife
viscosity cup
wet mil gauge
wheel dresser
wood rasp
wrenches

Portable Pneumatic and Power Tools

air compressor
angle grinder
biscuit jointer
drill and bits
driver and bits
flush trimmer
glue gun
heat gun
iron
laminate trimmer
nail/staple gun (pneumatic, electric, gas-powered)
power plane
powder-actuated tools
router and bits
sanders (detail, random orbital, belt, palm)
saws (reciprocating, circular, jig, mitre, table)
spray system

Stationary Power Tools and Equipment

air compressor
air dryer
band saw
bench grinder
case clamp
clamp rack
continuous gluing machine
conveyorized glue applicator
copy grinder
curing ovens
double-ended (twin) saw
drawer press
drill press
drying system
dust collector
gang saw
glue roller
guillotine
hinge boring machine
horizontal boring machine
horizontal copying lathe
jointer
lift tables
mortising machine
moulders
multi-boring machine
multi-spindle shaper
overhead pin router
panel saw (horizontal, vertical)
pneumatic press (clamping)
postforming machine
press (hot, cold)
profile and moulding sanding machine
radial arm saw
sanders (disc, wide belt, edge belt, spindle, oscillating, stroke)
scroll saw
shaper
spider clamps (clamp carrier)
spray booth
spraying systems
table saw
thickness planer
vacuum press
veneer saw
veneer splicer
wood lathe

Metalworking Tools

centre punch
file
hack saw
metal shears

Automated Equipment

automatic wide belt sander
beam saw
CNC machining center
case clamp
copying lathe
dovetailer
doweling machine
edge banding machine
gang saw
mortising machine
multiblade rip saw
panel stacker
power feeders
optimizing saw (computerised)

Shop-manufactured Related Devices

arc cutter
assembling tables
assembly jigs
auxiliary fence
cauls
centre finders
cove-cutting fences
custom benches
featherboards
forklift
locating spacers
machining jigs
pallet jack
push blocks
push sticks
roller line
sanding blocks
saw horses
shooting board
sliding tables
steam bending box
straight edge
templates

Layout Tools

angle finder
calipers
chalk line
combination square
compasses
computer software
contour gauge
drawing board
laser level
manual level
framing square
hand calculator
imperial and metric scale rules
marking gauge
measuring tape
personal computer
plumb bob
scratch awl
set square
speed square
spring clamps
steel square
straight edges
stud finder
sliding T-bevel
T square
trammel points
try square
writing tools (pencil, marker)

Personal Protective Equipment (PPE) and Safety Equipment

apron
coveralls
dust mask
ear protection
eye wash station
face shield
fire extinguisher
first aid kit
fresh air system and hood
hair net
head protection
gloves
goggles
respirator
safety boots
safety glasses

APPENDIX B GLOSSARY

adhesive	substance that is used to bond together materials by surface attachment
architectural millwork	furniture, cabinets and machined wood products such as doors, windows, stairways, mouldings, panelling, sidelights, transoms, trims, etc.
balusters	an upright supporting a handrail of a staircase or balcony
balustrade	row of repeating balusters surmounted by a capping or rail
bleaching	to apply a chemical solution to wood surfaces for lightening the colour
break out	to perform a rough-cut of material
cabinet	finished product that is attached to the wall or floor
carving	shaping by cutting into a hard material such as wood, plastic, stone
evacuation kit	kit containing a first aid kit and important information such as employee list, plant layout and company records
final assembly	final phase of production which involves the fitting together of previously subassembled components
finishing	application of finishing materials to wood surfaces for protection and to enhance appearance
furniture	finished product that is free standing
gables	vertical side or divider in a cabinet or piece of furniture
hand stitcher	a machine used to repair tears in veneer sheets before pressing to substrate
jigs	devices specifically designed and built for the safe performance of repetitive work. They may be used either to hold the work in place or to guide the tools during machining or assembly processes
laminating	adhering of two or more pieces of wood or composite material to achieve a desired width or thickness
layout	process of setting out full size patterns and shapes of parts and components of cabinet/furniture and architectural woodwork components

marquetry	craft of covering a structural carcass with veneer forming decorative patterns, designs or pictures
prototype	preliminary version or full-scale model of a cabinet or furniture item, built to ascertain the soundness of the design features; it also helps the production planning process
reconstituted veneers	veneers made from natural timber veneers, dyed all the way through, then laminated together and re-sliced to make veneers in unique patterns and colours
restoring	to repair and reconstruct furniture and cabinet components
riser	vertical part of the stairs that joins one thread to the next
scribe	to draw a line in order to cut a component to fit the profile of an uneven surface.
shop drawing	technical drawing used to communicate detailed specifications and dimensions of furniture and cabinet items
templates	pattern guide or model used for laying out or for verifying the accuracy of machined parts
tread	horizontal part of the stairs that you walk on
turning	the shaping of wood or metal on a lathe
veneer	thin layer of wood, sliced, cut or sawed to even thickness
veneer leaves	individual pieces of veneer
veneering	to prepare and cover surfaces with thin layers of wood or veneers
volute	handrail for a bullnose tread that is shaped like a spiral. Usually the bottom tread of the stairs
Workplace Hazardous Materials Information System (WHMIS)	Canadian legislation governing the provision of information about hazardous materials in the workplace

APPENDIX C

ACRONYMS

AWMAC	Architectural Woodwork Manufacturers Association of Canada
CAD	computer-aided design
CAM	computer-aided manufacturing
CNC	computer numerical control
CSA	Canadian Standards Association
GP	general purpose
HPL	high pressure laminate
HVLP	high volume low pressure
MDF	medium density fibreboard
MSDS	material safety data sheet
OH&S	Occupational Health and Safety
PPE	personal protective equipment
PVA	polyvinyl acetate
PVC	polyvinyl chloride
RTA	ready to assemble
RPM	revolutions per minute
WHMIS	Workplace Hazardous Materials Information System

APPENDIX D — BLOCK AND TASK WEIGHTING

BLOCK A COMMON OCCUPATIONAL SKILLS

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	10	16	12	7	NV	NV	15	19	10	5	NV	NV	NV	12%

Task 1 Performs safety-related functions.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	10	25	25	24	NV	NV	15	10	25	15	NV	NV	NV	19%

Task 2 Maintains tools and equipment.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	30	25	25	23	NV	NV	25	15	25	15	NV	NV	NV	23%

Task 3 Organizes work.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	30	25	25	23	NV	NV	25	37	20	30	NV	NV	NV	27%

Task 4 Performs routine work practices.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	30	25	25	30	NV	NV	35	38	30	40	NV	NV	NV	31%

BLOCK B MACHINING

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	20	12	19	20	NV	NV	10	15	20	30	NV	NV	NV	18%

Task 5 Machines components using stationary and portable power tools.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	60	100	80	63	NV	NV	60	85	50	80	NV	NV	NV	72%

Task 6 Machines components using automated equipment.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	40	0	20	37	NV	NV	40	15	50	20	NV	NV	NV	28%

BLOCK C FORMING AND LAMINATING

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	10	13	7	14	NV	NV	10	9	10	5	NV	NV	NV	10%

Task 7 Creates curved components using wood and composite materials.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	35	50	30	40	NV	NV	50	50	50	60	NV	NV	NV	46%

Task 8 Laminates wood and composite materials.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	65	50	70	60	NV	NV	50	50	50	40	NV	NV	NV	54%

BLOCK D VENEERS AND LAMINATES

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	15	16	5	12	NV	NV	10	9	10	10	NV	NV	NV	11%

Task 9 Applies veneers.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	25	50	20	43	NV	NV	30	50	45	65	NV	NV	NV	41%

Task 10 Applies laminate sheets.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	75	50	80	57	NV	NV	70	50	55	35	NV	NV	NV	59%

BLOCK E SHOP ASSEMBLY

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	15	14	18	24	NV	NV	20	17	20	30	NV	NV	NV	20%

Task 11 Assembles cabinets and furniture.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	65	50	60	63	NV	NV	50	65	60	75	NV	NV	NV	61%

Task 12 Assembles architectural millwork products.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	35	50	40	37	NV	NV	50	35	40	25	NV	NV	NV	39%

BLOCK F FINISHING

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	10	5	16	9	NV	NV	10	9	10	5	NV	NV	NV	9%

Task 13 Prepares surface for finishing.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	35	50	40	57	NV	NV	60	50	60	60	NV	NV	NV	51%

Task 14 Finishes wood products.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	65	50	60	43	NV	NV	40	50	40	40	NV	NV	NV	49%

BLOCK G ON-SITE ASSEMBLY AND INSTALLATION

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	10	19	14	9	NV	NV	15	16	10	10	NV	NV	NV	13%

Task 15 Modifies products to site conditions.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	45	33	30	25	NV	NV	10	20	25	30	NV	NV	NV	27%

Task 16 Installs cabinets and countertops.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	30	33	60	53	NV	NV	40	35	50	30	NV	NV	NV	41%

Task 17 Installs architectural millwork products and mouldings.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	25	34	10	22	NV	NV	50	45	25	40	NV	NV	NV	32%

BLOCK H SPECIALIZED OPERATIONS

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	10	5	9	5	NV	NV	10	6	10	5	NV	NV	NV	7%

Task 18 Builds stairs and balustrades.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	70	45	0	25	NV	NV	40	50	25	20	NV	NV	NV	34%

Task 19 Works with solid surface material and custom countertops.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	25	45	100	45	NV	NV	40	15	25	30	NV	NV	NV	41%

Task 20 Creates decorative woodwork.

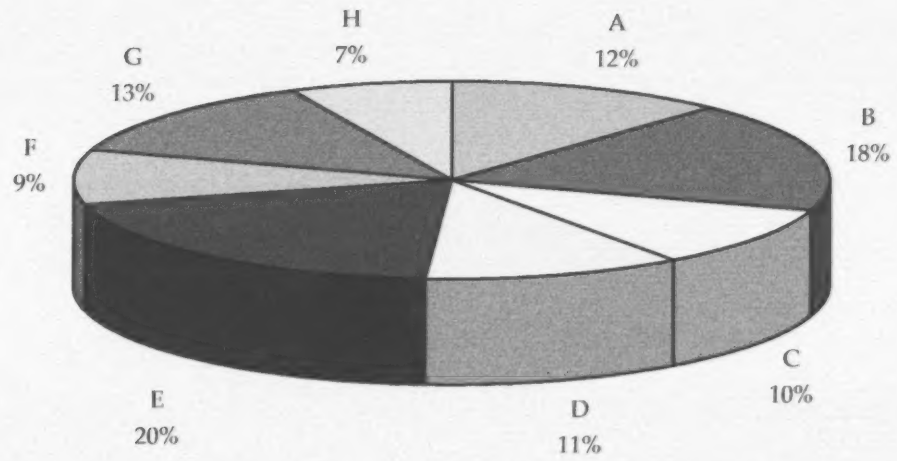
	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	5	0	0	15	NV	NV	10	0	25	30	NV	NV	NV	11%

Task 21 Restores woodwork.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	0	10	0	15	NV	NV	10	35	25	20	NV	NV	NV	14%

APPENDIX E

PIE CHART*



TITLES OF BLOCKS

BLOCK A	Common Occupational Skills	BLOCK E	Shop Assembly
BLOCK B	Machining	BLOCK F	Finishing
BLOCK C	Forming and Laminating	BLOCK G	On-Site Assembly and Installation
BLOCK D	Veneers and Laminates	BLOCK H	Specialized Operations

*Average percentage of the total number of questions on an interprovincial examination, assigned to assess each block of the analysis, as derived from the collective input from workers within the occupation from all areas of Canada. Interprovincial examinations typically have from 100 to 150 multiple-choice questions.

APPENDIX F

TASK PROFILE CHART — Cabinetmaker

BLOCKS	TASKS	SUB-TASKS				
A - COMMON OCCUPATIONAL SKILLS	1. Performs safety-related functions.	1.01 Maintains safe work environment.	1.02 Uses personal protective equipment (PPE) and safety equipment.			
	2. Maintains tools and equipment.	2.01 Maintains hand, portable power and pneumatic tools and equipment.	2.02 Maintains stationary power tools.	2.03 Maintains finishing equipment.		
	3. Organizes work.	3.01 Interprets prints and drawings.	3.02 Plans project.	3.03 Performs basic design.	3.04 Performs layout of cabinets, furniture and architectural millwork.	
	4. Performs routine work practices.	4.01 Handles materials, supplies and products.	4.02 Fabricates jigs and templates.	4.03 Builds prototypes.	4.04 Dry fits components.	4.05 Selects hardware.
		4.06 Selects adhesives and fasteners.				
B - MACHINING	5. Machines components using stationary and portable power tools.	5.01 Breaks out solid wood.	5.02 Dresses solid wood.	5.03 Shapes solid wood.	5.04 Breaks out sheet materials.	5.05 Machines sheet materials.
		5.06 Machines joints.	5.07 Performs preliminary sanding.			

BLOCKS	TASKS	SUB-TASKS			
	6. Machines components using automated equipment.	6.01 Sets up automated equipment.	6.02 Operates automated equipment.		
C - FORMING AND LAMINATING	7. Creates curved components using wood and composite materials.	7.01 Builds forms.	7.02 Performs curved laminating.	7.03 Steam-forms wood.	
	8. Laminates wood and composite materials.	8.01 Arranges materials for laminating.	8.02 Applies adhesive for laminating.	8.03 Clamps pieces together.	
D - VENEERS AND LAMINATES	9. Applies veneers.	9.01 Selects veneers.	9.02 Prepares veneer and substrate	9.03 Adheres veneers to substrates.	9.04 Performs final clean-up of veneered panels.
	10. Applies laminate sheets.	10.01 Selects laminate sheets.	10.02 Prepares laminate sheets and substrate.	10.03 Adheres laminate sheets to substrate.	10.04 Performs final clean-up of laminated sheets.
E - SHOP ASSEMBLY	11. Assembles cabinets and furniture.	11.01 Assembles cabinet components.	11.02 Assembles furniture components.	11.03 Assembles wood components.	11.04 Combines components into final assemblies.
	12. Assembles architectural millwork products.	12.01 Assembles architectural millwork components in the shop.	12.02 Assembles architectural fixtures in the shop.		
F - FINISHING	13. Prepares surface for finishing.	13.01 Repairs minor imperfections.	13.02 Performs final sanding of surfaces.		

BLOCKS	TASKS	SUB-TASKS			
	14. Finishes wood products.	14.01 Prepares finishing materials.	14.02 Applies finishing material manually.	14.03 Sprays on finishing material.	
G - ON-SITE ASSEMBLY AND INSTALLATION	15. Modifies products to site conditions.	15.01 Cuts access holes on site.	15.02 Scribes product to fit on site.		
	16. Installs cabinets and countertops.	16.01 Performs final on-site assembly and fastening of cabinets and countertops.	16.02 Finalizes installation of cabinets and countertops.		
	17. Installs architectural millwork products and mouldings.	17.01 Performs final on-site assembly and fastening of architectural millwork products.	17.02 Installs mouldings.	17.03 Finalizes installation of architectural millwork products.	
H - SPECIALIZED OPERATIONS	18. Builds stairs and balustrades.	18.01 Lays out stair and balustrade components.	18.02 Machines stair and balustrade components.	18.03 Assembles stairs and balustrades.	18.04 Installs stairs and balustrades.
	19. Works with solid surface material and custom countertops.	19.01 Breaks out materials.	19.02 Fabricates solid surface material.	19.03 Installs solid surface material.	
	20. Creates decorative woodwork.	20.01 Performs marquetry. (NOT COMMON CORE)	20.02 Performs carving. (NOT COMMON CORE)	20.03 Performs woodturning.	
	21. Restores woodwork.	21.01 Repairs woodwork for restoration purposes.	21.02 Refinishes woodwork.		